

REMARKS

Claims 1-30 are currently pending in the subject application and are presently under consideration. Claims 1, 8, 20, 22 and 26 have been amended as shown on pp. 2-6 of the Reply. Claims 7 and 21 have been canceled.

Applicant's representative thanks the Examiner for the courtesies extended during the teleconference of April 9, 2007.

Favorable reconsideration of the subject patent application is respectfully requested in view of the comments and amendments herein.

I. Rejection of Claims 1-18 and 20-21 Under 35 U.S.C. §101

Claims 1-18 and 20-21 stand rejected under 35 U.S.C. §101 as being directed to non-statutory subject matter. Independent claim 1 has been amended herein to clearly illustrate that elements within such claims are components associated with a computer processor. In particular, claims 1 and 20 as amended are directed towards a computer-based event handling system, comprising *a computer processor for executing the following software components*, the system is recorded on a computer-readable medium and capable of execution by a computer, comprising a framework component, a synchronization component and a configuration component, wherein the *framework component, synchronization component, and configuration component* perform a function (*e.g.*, supply classes of objects that can raise events, control synchronization of access to data based on the objects and enable the client component to disable or enable automated serialization and synchronization). (Support for these amendments can be found on pg. 6, lines 7-20). Accordingly, this claim includes functional descriptive material within a computer processor, thereby rendering it structurally and functionally interrelated to the computer processor and is therefore directed to statutory subject matter. Accordingly, this rejection should be withdrawn with regard to claims 1-18 and 20-21.

II. Rejection of Claims 1-11 and 18-30 Under 35 U.S.C. §102(e)

Claims 1-11 and 18-30 stand rejected under 35 U.S.C. §102(e) as being anticipated by Allavarpu *et al.* (US Patent 6,839,748). It is respectfully requested that this rejection should be withdrawn for at least the following reasons. Allavarpu *et al.* does not teach or suggest each and every element as set forth in the subject claims.

A single prior art reference anticipates a patent claim only if it expressly or inherently describes each and every limitation set forth in the patent claim. *Trintec Industries, Inc. v. Top-U.S.A. Corp.*, 295 F.3d 1292, 63 USPQ2d 1597 (Fed. Cir. 2002); *See Verdegaaal Bros. v. Union Oil Co. of California*, 814 F.2d 628, 631, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987). The identical invention must be shown in as complete detail as is contained in the ... claim. *Richardson v. Suzuki Motor Co.*, 868 F.2d 1226, 9 USPQ2d 1913, 1920 (Fed. Cir. 1989).

The claimed subject matter relates to synchronization of threads in a multi-threaded event-driven environment. The claimed subject matter employs an object structured system environment in which classes of objects raise events. The object system determines what synchronization is required for respective events based on a pre-categorization of the objects and associated instances. In particular, independent claim 1 recites an event handling system, comprising: *a framework component that supplies classes of objects that can raise events; a synchronization component that controls in part synchronization of access to data based on categorization of at least one of objects and instances defined by the framework, and provides automatic serialization for events raised by the classes of objects; and a configuration component that enables the client component to disable or enable automated serialization and synchronization.* Allavarpu *et al.* does not expressly or inherently disclose the aforementioned novel aspects of applicant's claimed subject matter as recited in the subject claims.

Allavarpu *et al.* discloses a system for a synchronous task scheduler. The synchronous task scheduler is used with a CORBA Gateway between CORBA-based client manager applications and an enterprise manager. The CORBA Gateway includes an Event Gateway which manages events from managed objects, and a Request Gateway which manages requests and responses of managed objects. The Event Gateway and the Request Gateway is designed as multi-threaded systems. A thread pool may be used to increase efficiency and performance of the CORBA Gateway. The thread pool provides multiple threads delivering events to multiple consumers, such that if one consumer is slow in processing events, other consumers should not be adversely affected. (*See* col. 6, line 41-col. 7, line 54).

In contrast, applicant's claimed subject matter discloses an event handling system. The system includes a framework component having a synchronization component that provides automatic serialization for events that are raised by one or more objects. The framework,

synchronization component, and/or associated object automatically manage or serialize the events in order that a client component can process other desired tasks at hand (*e.g.*, process driver-specific tasks rather than processing timing issues). The events are managed to allow one or more aspects of the events to occur in a one-at-a-time manner and in accordance with a serialized process. However, in processing the request and/or cancel request, and considering various events that may occur concurrently, the client program in a conventional system would have to provide serialization code or “locks” to prevent more than one event from possibly completing the request more than once. In the claimed system, the framework and/or object automatically provide serialization *via* the synchronization component.

Furthermore, the system includes a configuration component (*e.g.*, Application Programming Interface (API)) to enable the client component to disable and/or enable automated serialization and synchronization. The framework provides events to a device driver through a series of callback functions registered by the device driver. Each framework object generally defines its own events, but a common pattern of handling event serialization is typically employed to unify the concepts across the framework. One problem of serialization involves the amount of concurrency that a device driver (or client) is prepared to handle. In a conventional Model, device drivers have a fully concurrent environment in which threads may run on multiple processors, be preempted when running at lower than DISPATCH_LEVEL, for example, or preempted by interrupt handlers. To assist a driver writer or code designer, the framework offers configurable serialization that allows simpler techniques to achieve a desired level of performance, while still allowing a more complex driver to turn off the serialization and achieve behavior with a possible increase in performance. This is opposed to a synchronous or “blocking” model in which a read event handler submits the read, and then waits within the read event handler for an event signaled by the device when the read is complete. (*See* pg. 6, line 21-pg. 9, line 2).

Allavarpu *et al.* merely discloses the use of a synchronous task scheduler that preserves the chronology of messages sent to the client manager. When messages are delivered serially to the client manager application, such messages are scheduled by the synchronous task scheduler. The synchronous task scheduler maintains an internal message list, and delivers one message at a time from that internal list. (*See* col. 22, lines 5-45). Applicant’s claimed system offers configurable serialization that allows simpler techniques to achieve a desired level of

performance, while still allowing a more complex driver to turn off the serialization and achieve behavior with a possible increase in performance. This is opposed to a synchronous or “blocking” model, as in Allavarpu *et al.*, in which a read event handler submits the read, and then waits within the read event handler for an event signaled by the device when the read is complete. Accordingly, Allavarpu *et al.* does not expressly or inherently disclose a system that provides ... ***automatic serialization for events raised by the classes of objects; and a configuration component that enables the client component to disable or enable automated serialization and synchronization.***

In view of at least the above, it is readily apparent that Allavarpu *et al.* fails to expressly or inherently disclose applicant’s claimed subject matter as recited in independent claims 1, 20, 22 and 26 (and claims 2-11, 18-19, 21, 23-25 and 27-30 which respectively depend there from). Accordingly, it is respectfully requested that these claims be deemed allowable.

III. Rejection of Claims 12-17 Under 35 U.S.C. §103(a)

Claims 12-17 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Allavarpu *et al.* in view of Mandal *et al.* (US 2004/0117369). It is respectfully requested that this rejection should be withdrawn for at least the following reasons. Allavarpu *et al.* and Mandal *et al.*, individually or in combination, do not teach or suggest each and every element as set forth in the subject claims. In particular, Mandal *et al.* does not make up for the aforementioned deficiencies of Allavarpu *et al.* with respect to independent claim 1 (which claims 12-17 depend from). Thus, the subject invention as recited in claims 12-17 is not obvious over the combination of Allavarpu *et al.* and Mandal *et al.*

CONCLUSION

The present application is believed to be in condition for allowance in view of the above comments and amendments. A prompt action to such end is earnestly solicited.

In the event any fees are due in connection with this document, the Commissioner is authorized to charge those fees to Deposit Account No. 50-1063 [MSFTP490US].

Should the Examiner believe a telephone interview would be helpful to expedite favorable prosecution, the Examiner is invited to contact applicant's undersigned representative at the telephone number below.

Respectfully submitted,

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